



UNITED STATES PATENT AND TRADEMARK OFFICE

SD
UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/605,773	10/24/2003	Brian Neal Caldwell	BUR920030109US1	2772
28211	7590	05/04/2005	EXAMINER	
FREDERICK W. GIBB, III MCGINN & GIBB, PLLC 2568-A RIVA ROAD SUITE 304 ANNAPOLIS, MD 21401			TALBOT, MICHAEL	
			ART UNIT	PAPER NUMBER
			3722	
DATE MAILED: 05/04/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	10/605,773	CALDWELL ET AL.
	Examiner	Art Unit
	Michael W Talbot	3722

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 24 October 2003.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-40 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-3,5-16,18-37,39 and 40 is/are rejected.
- 7) Claim(s) 4,17 and 38 is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 24 October 2003 is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. _____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ . |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ . | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| | 6) <input type="checkbox"/> Other: _____ . |

DETAILED ACTION

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the method step item 53 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

2. The disclosure is objected to because of the following informalities:

Refer to page 5, line 21, the character reference "foreign matter particles 13" should be changed to read --foreign matter particle 13--.

Refer to page 6, line 9, the character reference "pin chuck 21" should be changed to read --electrostatic pin 21--.

Art Unit: 3722

Refer to page 6, line 11, and page 7, line 23, the two occurrences of the character reference "particles 13" should be changed to read --particle 13--.

Refer to page 6, line 12, the character reference "chuck 21" should be changed to read --electrostatic pin chuck 20--.

Refer to page 7, lines 9 and 10, the character reference "adaptive electrostatic pin chuck 31" should be changed to read --adaptive electrostatic pin chuck 30--.

Refer to page 7, lines 12,13 and 14, the three occurrences of the character reference "pin chuck 21" should be changed to read --electrostatic pin 21--.

Refer to page 7, line 21, the character reference "pins 21" should be changed to read --electrostatic pins 21--.

Refer to page 8, line 19, the term "toll" should be changed to read --tool--.

Refer to page 8, line 21, the character reference "measurement tool 41" should be changed to read --measurement tool 40--.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 28-34 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 28 recites the limitation "said measuring process" in lines 7 and 8 of claim 28. There is insufficient antecedent basis for this limitation in the claim.

Claim 29 recites the limitation "said adjusting process" in lines 1 and 2 of claim 29. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1,3,8 and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by van Os et al. '556. Van Os et al. '556 shows in Figures 4,8 and 9 an electrostatic chuck (10) having a base plate (18), a height adjustment mechanism (86) connected to base plate and electrostatic chuck pins (88) connected to the height adjustment mechanism. Van Os et al. '556 further discloses in col. 7, lines 14-27 that the flatness (i.e. a substantially horizontal orientation) is controlled through synchronized movements of the height adjustment mechanism.

Claims 8,11 and 13 are rejected under 35 U.S.C. 102(b) as being anticipated by Anderson et al. '133. Anderson '133 shows in Figures 5-7 an electrostatic chuck (204) having a height adjustment mechanism (230) and electrostatic chuck pins (228) connected to the height adjustment mechanism. Anderson et al. '133 further discloses the height adjustment mechanism comprising computer controlled devices (242,246,248,250,252) and a lead screw (244).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 3722

Claims 2 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over van Os et al. '556 in view of Guyot '423. Van Os et al. '556 lacks the height adjustment mechanism individually controlling the height of the electrostatic chuck pins. Guyot '423 shows in Figure 2 a height adjustment mechanism (130) being capable of individually controlling each pin (col. 3, lines 42-55). In view of this teaching of Guyot '423, it is considered to have been obvious to replace the electrostatic pin assembly of van Os et al. '556 with another well-known, individually controlled electrostatic pin assembly by Guyot '423 to eliminate the need for a separate platform for raising and lowering the electrostatic pins thus making the design more compact and versatile to accommodate larger sized objects.

Claims 5,6,11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over van Os et al. '556 in view of Shiota et al. '837. Van Os et al. '556 lacks the height adjustment mechanism comprising computer controlled devices that automatically maintains a flatness of an object held by the electrostatic chuck pins. Shiota et al. '837 shows in Figures 1 and 2 a height adjustment mechanism (2) comprising computer controlled devices (40,41,62,63,64) that automatically maintain a flatness of an object (Figures 8A,8B and col. 7, lines 38-65) held by the electrostatic chuck pins. In view of this teaching Shiota et al. '837, it is considered to have been obvious to modify the electrostatic chuck of van Os et al. '556 to include computer controlled components disclosed by Guyot '423 to provide enhanced control of the height adjustment mechanism and continuous monitoring capabilities of the objects outer surface characteristics.

Claims 7 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over van Os et al. '556 in view of Or et al. 2004/0045509. Van Os et al. '556 lacks the height adjustment mechanism being one of screw type mechanisms, piezoelectric actuators, hydraulic actuators, hydraulic pistons, thermal actuators and magnetic actuators. Or et al. 2004/0045509 shows on page 1, paragraph [0014] that the height adjustment mechanism (116) may be a pneumatic

cylinder, hydraulic cylinder, lead screw, solenoid, stepper motor or other motion devices. In view of this teaching Or et al. 2004/0045509, it is considered to have been obvious to replace the pneumatic cylinder height adjustment mechanism of van Os et al. '556 with another well-known motion device disclosed by Or et al. 2004/0045509, such as a hydraulic cylinder or lead screw to achieve the desired movement.

Claims 14,16,18,19,21,23,25,26,28,29,31,33-35,37,39 and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over van Os et al. '556 in view of Shiota et al. '837, further in view of Lund '044. Van Os et al. '556 in view of Shiota et al. '837 lack the computer being linked to a height adjustment mechanism and a measurement tool for adjusting the flatness of the object through the height adjustment mechanism based upon feedback data from the measurement tool to the computer. Lund '044 shows in Figures 10-13 a computer (60) for receiving the real-time data from a measurement tool (101), such as an interferometer, to monitor any number of desired parameters, such as flatness. In view of this teaching Lund '044, it is considered to have been obvious to replace the computer controlled height adjustment mechanism for the electrostatic chuck of van Os et al. '556 in view of Shiota et al. '837 to include another well-known computer controlled apparatus by Lund '044 for measuring a number of key parameter for improved quality control.

Claims 15,22,30 and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over van Os et al. '556 in view of Shiota et al. '837 in view of Lund '044, further in view of Guyot '423. Van Os et al. '556 in view of Shiota et al. '837 in view of Lund '044 lack the height adjustment mechanism individually controlling the height of the electrostatic chuck pins. Guyot '423 shows in Figure 2 a height adjustment mechanism (130) being capable of individually controlling each pin (col. 3, lines 42-55). In view of this teaching of Guyot '423, it is considered to have been obvious to replace the electrostatic pin assembly of van Os et al. '556 in view of Shiota et al.

Art Unit: 3722

'837 in view of Lund '044 with another well-known, individually controlled electrostatic pin assembly by Guyot '423 to eliminate the need for a separate platform for raising and lowering the electrostatic pins thus making the design more compact and versatile to accommodate larger sized objects.

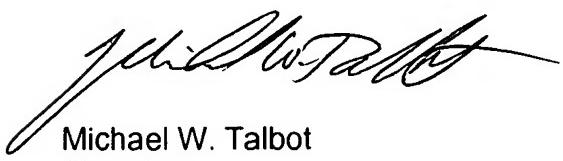
Claims 20 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over van Os et al. '556 in view of Shiota et al. '837 in view of Lund '044, further in view of Or et al. 2004/0045509. Van Os et al. '556 in view of Shiota et al. '837 in view of Lund '044 lack the height adjustment mechanism being one of screw type mechanisms, piezoelectric actuators, hydraulic actuators, hydraulic pistons, thermal actuators and magnetic actuators. Or et al. 2004/0045509 shows on page 1, paragraph [0014] that the height adjustment mechanism (116) may be a pneumatic cylinder, hydraulic cylinder, lead screw, solenoid, stepper motor or other motion devices. In view of this teaching Or et al. 2004/0045509, it is considered to have been obvious to replace the pneumatic cylinder height adjustment mechanism of van Os et al. '556 with another well-known motion device disclosed by Or et al. 2004/0045509, such as a hydraulic cylinder or lead screw to achieve the desired movement.

Allowable Subject Matter

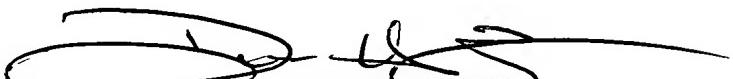
6. Claims 4,17 and 38 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. Any inquiry concerning the content of this communication from the examiner should be directed to Michael W. Talbot, whose telephone number is 571-272-4481. The examiner's office hours are typically 8:30am until 5:00pm, Monday through Friday. The examiner's supervisor, Mr. Derris Banks, may be reached at 571-272-4419.

In order to reduce pendency and avoid potential delays, Group 3720 is encouraging FAXing of responses to Office Actions directly into the Group at FAX number 703-872-9306. This practice may be used for filing papers not requiring a fee. It may also be used for filing papers, which require a fee, by applicants who authorize charges to a USPTO deposit account. Please identify Examiner Michael W. Talbot of Art Unit 3722 at the top of your cover sheet.



Michael W. Talbot
Examiner
Art Unit 3722



DERRIS H. BANKS
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3700